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Abstract

PROBLEM TO BE SOLVED: To restrict lamination defects and give longer life by forming a defect restricting layer by one atomic layer or more, having a group II element and a group V element at the interface between a III-V compound semiconductor substrate and a II-VI compound semiconductor crystal.

SOLUTION: At the interface between a III-V compound semiconductor substrate 11 and II-VI semiconductor crystals 12 to 20, a defect restricting layer 12 crystallized in a group II element and a group V element is formed. Here, as the group II element, it is desired to be either Zn, Cd, Be or Mg, and as the V group element, it is desired to be one among N, P, As and Sb. The II-VI compound semiconductor crystals 12 to 22 produced on the defect restricting layer 12 are ready to form a secondary growth from an early stage of growth, and the occurrence of lamination defect can be restricted. This defect restricting layer 12 is formed by simultaneous or alternating supply of the raw material of group II element and the raw material of group V element. At this time, it is desirable that the top surface of the III-V semiconductor compound substrate 11 become a stabilized surface or an excessive surface of the group V element.